



SEQUENCE LISTING

<110> Jahic, Haris  
Kern, Gustaf  
<120> Screening Assay to Identify Inhibitors of the MurD Enzyme using  
an Activator-Independent MurD enzyme  
<130> RE: 100874-1P US  
<150> GB 0224997.7  
<151> 2002-10-26  
<150> PCT/GB2003/004592  
<151> 2003-10-23  
<160> 4  
<170> PatentIn version 3.3  
<210> 1  
<211> 438  
<212> PRT  
<213> Escherichia coli  
<400> 1

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Thr Gly Leu Ser Cys Val Asp Phe Phe Leu Ala Arg Gly Val Thr Pro  
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Arg Val Met Asp Thr Arg Met Thr Pro Pro Gly Leu Asp Lys Leu Pro  
35 40 45

Glu Ala Val Glu Arg His Thr Gly Ser Leu Asn Asp Glu Trp Leu Met  
50 55 60

Ala Ala Asp Leu Ile Val Ala Ser Pro Gly Ile Ala Leu Ala His Pro  
65 70 75 80

Ser Leu Ser Ala Ala Ala Asp Ala Gly Ile Glu Ile Val Gly Asp Ile  
85 90 95

Glu Leu Phe Cys Arg Glu Ala Gln Ala Pro Ile Val Ala Ile Thr Gly  
100 105 110

Ser Asn Gly Lys Ser Thr Val Thr Thr Leu Val Gly Glu Met Ala Lys  
115 120 125

Ala Ala Gly Val Asn Val Gly Val Gly Gly Asn Ile Gly Leu Pro Ala  
130 135 140

Leu Met Leu Leu Asp Asp Glu Cys Glu Leu Tyr Val Leu Glu Leu Ser  
145 150 155 160

Ser Phe Gln Leu Glu Thr Thr Ser Ser Leu Gln Ala Val Ala Ala Thr  
165 170 175

Ile Leu Asn Val Thr Glu Asp His Met Asp Arg Tyr Pro Phe Gly Leu  
 180 185 190  
 Gln Gln Tyr Arg Ala Ala Lys Leu Arg Ile Tyr Glu Asn Ala Lys Val  
 195 200 205  
 Cys Val Val Asn Ala Asp Asp Ala Leu Thr Met Pro Ile Arg Gly Ala  
 210 215 220  
 Asp Glu Arg Cys Val Ser Phe Gly Val Asn Met Gly Asp Tyr His Leu  
 225 230 235 240  
 Asn His Gln Gln Gly Glu Thr Trp Leu Arg Val Lys Gly Glu Lys Val  
 245 250 255  
 Leu Asn Val Lys Glu Met Lys Leu Ser Gly Gln His Asn Tyr Thr Asn  
 260 265 270  
 Ala Leu Ala Ala Leu Ala Leu Ala Asp Ala Ala Gly Leu Pro Arg Ala  
 275 280 285  
 Ser Ser Leu Lys Ala Leu Thr Thr Phe Thr Gly Leu Pro His Arg Phe  
 290 295 300  
 Glu Val Val Leu Glu His Asn Gly Val Arg Trp Ile Asn Asp Ser Lys  
 305 310 315 320  
 Ala Thr Asn Val Gly Ser Thr Glu Ala Ala Leu Asn Gly Leu His Val  
 325 330 335  
 Asp Gly Thr Leu His Leu Leu Leu Gly Gly Asp Gly Lys Ser Ala Asp  
 340 345 350  
 Phe Ser Pro Leu Ala Arg Tyr Leu Asn Gly Asp Asn Val Arg Leu Tyr  
 355 360 365  
 Cys Phe Gly Arg Asp Gly Ala Gln Leu Ala Ala Leu Arg Pro Glu Val  
 370 375 380  
 Ala Glu Gln Thr Glu Thr Met Glu Gln Ala Met Arg Leu Leu Ala Pro  
 385 390 395 400  
 Arg Val Gln Pro Gly Asp Met Val Leu Leu Ser Pro Ala Cys Ala Ser  
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 Leu Asp Gln Phe Lys Asn Phe Glu Gln Arg Gly Asn Glu Phe Ala Arg  
 420 425 430  
 Leu Ala Lys Glu Leu Gly  
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 <212> PRT

<213> Escherichia faecalis

<400> 2

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Ala Leu Val Thr Val Asn Asp Ala Lys Gln Phe Asp Gln Asn Pro Asp  
35 40 45  
Ala Gln Asp Leu Leu Thr Leu Gly Ile Arg Val Val Thr Gly Gly His  
50 55 60  
Pro Ile Glu Leu Leu Asp Glu Glu Phe Glu Leu Ile Val Lys Asn Pro  
65 70 75 80  
Gly Ile Leu Tyr Thr Asn Pro Leu Val Ala Glu Ala Leu Thr Arg Lys  
85 90 95  
Ile Pro Ile Ile Thr Glu Val Glu Leu Ala Gly Gln Ile Ala Glu Cys  
100 105 110  
Pro Ile Val Gly Ile Thr Gly Thr Asn Gly Lys Thr Thr Thr Thr Thr  
115 120 125  
Met Ile Gly Leu Leu Leu Asn Ala Asp Arg Thr Ala Gly Glu Ala Arg  
130 135 140  
Leu Ala Gly Asn Ile Gly Phe Pro Ala Ser Thr Val Ala Gln Glu Ala  
145 150 155 160  
Thr Ala Lys Asp Asp Leu Val Met Glu Leu Ser Ser Phe Gln Leu Met  
165 170 175  
Gly Ile Glu Thr Phe His Pro Gln Ile Ala Val Ile Thr Asn Ile Phe  
180 185 190  
Glu Ala His Leu Asp Tyr His Gly Ser Arg Lys Glu Tyr Val Ala Ala  
195 200 205  
Lys Trp Ala Ile Gln Lys Asn Met Thr Ala Glu Asp Thr Leu Ile Leu  
210 215 220  
Asn Trp Asn Gln Val Glu Leu Gln Thr Leu Ala Lys Thr Thr Ala Ala  
225 230 235 240  
Asn Val Leu Pro Phe Ser Thr Lys Glu Ala Val Glu Gly Ala Tyr Leu  
245 250 255  
Leu Asp Gly Lys Leu Tyr Phe Asn Glu Glu Tyr Ile Met Pro Ala Asp  
260 265 270

Glu Leu Gly Ile Pro Gly Ser His Asn Ile Glu Asn Ala Leu Ala Ala  
 275 280 285  
 Ile Cys Val Pro Lys Leu Lys Asn Val Ser Asn Ala Gln Ile Lys Gln  
 290 295 300  
 Ser Leu Thr Asn Phe Ser Gly Val Pro His Arg Thr Gln Phe Val Gly  
 305 310 315 320  
 Glu Val Gln Gln Arg Arg Phe Tyr Asn Asp Ser Lys Ala Thr Asn Phe  
 325 330 335  
 Leu Ala Thr Glu Met Ala Leu Ser Gly Phe Asp Asn Gln Lys Leu Leu  
 340 345 350  
 Leu Leu Ala Gly Gly Leu Asp Arg Gly Asn Ser Phe Asp Glu Leu Val  
 355 360 365  
 Pro Ala Leu Leu Gly Leu Lys Ala Ile Val Leu Phe Gly Glu Thr Lys  
 370 375 380  
 Lys Lys Leu Ala Glu Ala Ala Lys Lys Pro Asn Ile Glu Thr Ile Leu  
 385 390 395 400  
 Phe Ala Glu Asn Val Gln Thr Ala Val Thr Ile Ala Phe Asp Tyr Ser  
 405 410 415  
 Glu Lys Asp Asp Thr Ile Leu Leu Ser Pro Ala Cys Ala Ser Trp Asp  
 420 425 430  
 Gln Tyr Pro Asn Phe Glu Val Arg Gly Glu Ala Phe Met Gln Ala Val  
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 Gln Gln Leu Lys Glu Ser Glu Met  
 450 455

<210> 3  
 <211> 448  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 3

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 Lys Ser Gly Met Ser Leu Val Arg Tyr Leu Ala Arg Arg Gly Leu Pro  
 20 25 30  
 Phe Ala Val Val Asp Thr Arg Glu Asn Pro Pro Glu Leu Ala Thr Leu  
 35 40 45  
 Arg Ala Gln Tyr Pro Gln Val Glu Val Arg Cys Gly Glu Leu Asp Ala  
 50 55 60

Glu Phe Leu Cys Ser Ala Arg Glu Leu Tyr Val Ser Pro Gly Leu Ser  
 65 70 75 80  
 Leu Arg Thr Pro Ala Leu Val Gln Ala Ala Lys Gly Val Arg Ile  
 85 90 95  
 Ser Gly Asp Ile Asp Leu Phe Ala Arg Glu Ala Lys Ala Pro Ile Val  
 100 105 110  
 Ala Ile Thr Gly Ser Asn Ala Lys Ser Thr Val Thr Thr Leu Val Gly  
 115 120 125  
 Glu Met Ala Val Ala Ala Asp Lys Arg Val Ala Val Gly Gly Asn Leu  
 130 135 140  
 Gly Thr Pro Ala Leu Asp Leu Leu Ala Asp Asp Ile Glu Leu Tyr Val  
 145 150 155 160  
 Leu Glu Leu Ser Ser Phe Gln Leu Glu Thr Cys Asp Arg Leu Asn Ala  
 165 170 175  
 Glu Val Ala Thr Val Leu Asn Val Ser Glu Asp His Met Asp Arg Tyr  
 180 185 190  
 Asp Gly Met Ala Asp Tyr His Leu Ala Lys His Arg Ile Phe Arg Gly  
 195 200 205  
 Ala Arg Gln Val Val Val Asn Arg Ala Asp Ala Leu Thr Arg Pro Leu  
 210 215 220  
 Ile Ala Asp Thr Val Pro Cys Trp Ser Phe Gly Leu Asn Lys Pro Asp  
 225 230 235 240  
 Phe Lys Ala Phe Gly Leu Ile Glu Glu Asp Gly Gln Lys Trp Leu Ala  
 245 250 255  
 Phe Gln Phe Asp Lys Leu Leu Pro Val Gly Glu Leu Lys Ile Arg Gly  
 260 265 270  
 Ala His Asn Tyr Ser Asn Ala Leu Ala Ala Leu Ala Leu Gly His Ala  
 275 280 285  
 Val Gly Leu Pro Phe Asp Ala Met Leu Gly Ala Leu Lys Ala Phe Ser  
 290 295 300  
 Gly Leu Ala His Arg Cys Gln Trp Val Arg Glu Arg Gln Gly Val Ser  
 305 310 315 320  
 Tyr Tyr Asp Asp Ser Lys Ala Thr Asn Val Gly Ala Ala Leu Ala Ala  
 325 330 335  
 Ile Glu Gly Leu Gly Ala Asp Ile Asp Gly Lys Leu Val Leu Leu Ala  
 340 345 350

Gly Gly Asp Gly Lys Gly Ala Asp Phe His Asp Leu Arg Glu Pro Val  
355 360 365

Ala Arg Phe Cys Arg Ala Val Val Leu Leu Gly Arg Asp Ala Gly Leu  
370 375 380

Ile Ala Gln Ala Leu Gly Asn Ala Val Pro Leu Val Arg Val Ala Thr  
385 390 395 400

Leu Asp Glu Ala Val Arg Gln Ala Ala Glu Leu Ala Arg Glu Gly Asp  
405 410 415

Ala Val Leu Leu Ser Pro Ala Cys Ala Ser Leu Asp Met Phe Lys Asn  
420 425 430

Phe Glu Glu Arg Gly Arg Leu Phe Ala Lys Ala Val Glu Glu Leu Ala  
435 440 445

<210> 4  
<211> 449  
<212> PRT  
<213> Staphylococcus aureus

<400> 4

Met Leu Asn Tyr Thr Gly Leu Glu Asn Lys Asn Val Leu Val Val Gly  
1 5 10 15

Leu Ala Lys Ser Gly Tyr Glu Ala Ala Lys Leu Leu Ser Lys Leu Gly  
20 25 30

Ala Asn Val Thr Val Asn Asp Gly Lys Asp Leu Ser Gln Asp Ala His  
35 40 45

Ala Lys Asp Leu Glu Ser Met Gly Ile Ser Val Val Ser Gly Ser His  
50 55 60

Pro Leu Thr Leu Leu Asp Asn Asn Pro Ile Ile Val Lys Asn Pro Gly  
65 70 75 80

Ile Pro Tyr Thr Val Ser Ile Ile Asp Glu Ala Val Lys Arg Gly Leu  
85 90 95

Lys Ile Leu Thr Glu Val Glu Leu Ser Tyr Leu Ile Ser Glu Ala Pro  
100 105 110

Ile Ile Ala Val Thr Gly Thr Asn Gly Lys Thr Thr Val Thr Ser Leu  
115 120 125

Ile Gly Asp Met Phe Lys Lys Ser Arg Leu Thr Gly Arg Leu Ser Gly  
130 135 140

Asn Ile Gly Tyr Val Ala Ser Lys Val Ala Gln Glu Val Lys Pro Thr  
145 150 155 160

Asp Tyr Leu Val Thr Glu Leu Ser Ser Phe Gln Leu Leu Gly Ile Glu  
 165 170 175  
 Lys Tyr Lys Pro His Ile Ala Ile Ile Thr Asn Ile Tyr Ser Ala His  
 180 185 190  
 Leu Asp Tyr His Glu Asn Leu Glu Asn Tyr Gln Asn Ala Lys Lys Gln  
 195 200 205  
 Ile Tyr Lys Asn Gln Thr Glu Glu Asp Tyr Leu Ile Cys Asn Tyr His  
 210 215 220  
 Gln Arg Gln Val Ile Glu Ser Glu Glu Leu Lys Ala Lys Thr Leu Tyr  
 225 230 235 240  
 Phe Ser Thr Gln Gln Glu Val Asp Gly Ile Tyr Ile Lys Asp Gly Phe  
 245 250 255  
 Ile Val Tyr Lys Gly Val Arg Ile Ile Asn Thr Glu Asp Leu Val Leu  
 260 265 270  
 Pro Gly Glu His Asn Leu Glu Asn Ile Leu Ala Ala Val Leu Ala Cys  
 275 280 285  
 Ile Leu Ala Gly Val Pro Ile Lys Ala Ile Ile Asp Ser Leu Thr Thr  
 290 295 300  
 Phe Ser Gly Ile Glu His Arg Leu Gln Tyr Val Gly Thr Asn Arg Thr  
 305 310 315 320  
 Asn Lys Tyr Tyr Asn Asp Ser Lys Ala Thr Asn Thr Leu Ala Thr Gln  
 325 330 335  
 Phe Ala Leu Asn Ser Phe Asn Gln Pro Ile Ile Trp Leu Cys Gly Gly  
 340 345 350  
 Leu Asp Arg Gly Asn Glu Phe Asp Glu Leu Ile Pro Tyr Met Glu Asn  
 355 360 365  
 Val Arg Ala Met Val Val Phe Gly Gln Thr Lys Ala Lys Phe Ala Lys  
 370 375 380  
 Leu Gly Asn Ser Gln Gly Lys Ser Val Ile Glu Ala Asn Asn Val Glu  
 385 390 395 400  
 Asp Ala Val Asp Lys Val Gln Asp Ile Ile Glu Pro Asn Asp Val Val  
 405 410 415  
 Leu Leu Ser Pro Ala Cys Ala Ser Trp Asp Gln Tyr Ser Thr Phe Glu  
 420 425 430  
 Glu Arg Gly Glu Lys Phe Ile Glu Arg Phe Arg Ala His Leu Pro Ser

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Tyr